

20020604.ba v03\_n343.bam.20020604

>From ???@??? Tue Jun 4 18:31:47 2002 -0500  
Message-Id: <200206042331.g54NVXlc017007@sco.theporch.com>  
Date: Tue, 4 Jun 2002 18:31:16 CDT  
From: Old Tube Radios <boatanchors@theporch.com>  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: BOATANCHORS digest 3343

BOATANCHORS Digest 3343

Topics covered in this issue include:

- 1) Re: Audio quality in Boatanchors-why should you care?  
by Avery Comarow <acomarow@usnews.com>
- 2) FS: NC-88, DM-21B, Donner Meter  
by Merz Donald S <merz.ds@mellon.com>
- 3) Re: NPR "Lost and Found Sounds" about Radio Row  
by John Shriver <jshriver@sockeye.com>
- 4) S 72 update  
by "David L. Thompson" <thompson@mindspring.com>
- 5) tube  
by "russ dworakowski" <wb3fau@hotmail.com>
- 6) Re: Audio quality in Boatanchors-why should you care?  
by Scott Robinson <spr@earthlink.net>
- 7) Re: S 72 update  
by Scott Robinson <spr@earthlink.net>
- 8) Re: Audio quality in Boatanchors-why should you care?  
by Avery Comarow <acomarow@usnews.com>
- 9) PC motherboard with a vacuum tube audio output section  
by Chuck Grandgent <chuck@k1om.com>
- 10) RE: Audio quality in Boatanchors-why should you care?  
by "WF2U" <wf2u@starband.net>
- 11) Fwd: RE: Audio quality in Boatanchors-why should you care?  
by Scott Robinson <spr@earthlink.net>
- 12) Re: Swan 240 filament voltage  
by Robert Lawson <w4rl@bellsouth.net>
- 13) Re: Swan 240 filament voltage  
by Robert Lawson <w4rl@bellsouth.net>

---

Message-Id: <4.2.2.20020604083201.00aa23f0@ntpop.usnews.com>  
Date: Tue, 04 Jun 2002 08:34:36 -0400  
To: Old Tube Radios <boatanchors@theporch.com>  
From: Avery Comarow <acomarow@usnews.com>  
Subject: Re: Audio quality in Boatanchors-why should you care?  
Mime-Version: 1.0  
Content-Type: multipart/alternative;

boundary="=====\_56688924==\_.ALT"

--=====\_56688924==\_.ALT

Content-Type: text/plain; charset="us-ascii"; format=flowed

Scott,

Forgive the dumb question, but unless the speaker is fed directly from the audio output tube(s), isn't the output (the secondary of the audio output transformer) low impedance?

73, Avery W3AVE in Potomac, Md.

At 12:19 AM 6/4/02 -0700, you wrote:

>Folks,

>

>OK, why should you care about audio quality in Boatanchors? Well, let me  
>suggest two reasons: listening pleasure and intelligibility.

>

>Someone recently posted a piece about his favorite old receivers, and  
>commented that the one with the push-pull triodes (triode connected 6F6s,  
>if I recall correctly) sounded better.

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>First let me say that I do design professional audio equipment for a  
>living, but I am NOT an audiophooole. My house probably does not contain  
>any oxygen free copper cable, my stereo does not have class A output  
>stages, and I don't paint the edges of my CDs with green magic marker to  
>improve the sound.

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>So, why do the triodes sound better? There are two reasons:

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>1) Their distortion is lower order (mostly 2nd and 3rd harmonic) and  
>therefore less audible;

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>2) they have an inherently low output impedance.

>

>The second is probably more of an influence on the perceived sound, at  
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>a pentode or beam power tube output stage with no feedback, you emphasize  
>all the resonances, giving a one-note bass boom at the fundamental  
>resonance and other peaks at some of the cone drum-head resonances. You  
>may also get a treble boost due to the rising impedance of the speaker  
>with frequency.

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>You see, this audio quality stuff might actually be relevant to BA listening.  
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>Scott  
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>PS-the spell checker tried to replace "triode" with "tirade." I refused.  
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>  
>  
>  
>Scott Robinson  
>spr@earthlink.net  
>  
>Junque is GOOD for you!  
></blockquote></x-html>

--=====56688924==\_ .ALT  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

```
* * * * *
*      ---REMAINDER OF MESSAGE TRUNCATED---      *
*      This post contains a forbidden message format      *
*      (such as an attached file, a v-card, HTML formatting) *
*      Mail Lists at theporch.com only accept PLAIN TEXT      *
*      If your postings display this message your mail program *
*      is not set to send PLAIN TEXT ONLY and needs adjusting *
* * * * *
```

--=====56688924==\_ .ALT--

-----  
Message-ID: <20020604125222.25250.qmail@mellon.com>

From: Merz Donald S <merz.ds@mellon.com>  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: FS: NC-88, DM-21B, Donner Meter  
Date: Tue, 4 Jun 2002 08:51:46 -0400  
MIME-Version: 1.0  
Content-Type: multipart/alternative;  
boundary="----=\_NextPart\_001\_01C20BC6.9601DD90"

This message is in MIME format. Since your mail reader does not understand this format, some or all of this message may not be legible.

-----=\_NextPart\_001\_01C20BC6.9601DD90  
Content-Type: text/plain;  
charset="iso-8859-1"

For Sale. Headed to eBay unless someone here wants it.

National NC-88 General Coverage receiver. This is by far the nicest one of these I have ever seen. All original. Very clean paint. Very clean copper chassis. Untested but believed to be working. Dials work correctly. \$125

Donner Wow And Flutter meter. For testing tape recorders. Compares a signal input to the recorder to the signal coming off the playback head and calculates wow and flutter. Needs new line cord. Good cosmetic condition. Untested. As-is. \$49

DM-21B dynamotor power supply for the BC-342 receiver. Brand new. Never used. 1943 contract. Made by Farnsworth Television. \$29

Thanks.  
73, Don Merz, N3RHT

\*\*\*\*\*  
DISCLAIMER: The information contained in this e-mail may be confidential and is intended solely for the use of the named addressee. Access, copying or re-use of the e-mail or any information contained therein by any other person is not authorized. If you are not the intended recipient please notify us immediately by returning the e-mail to the originator.

-----=\_NextPart\_001\_01C20BC6.9601DD90  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

\* \* \* \* \*  
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\* If your postings display this message your mail program \*  
\* is not set to send PLAIN TEXT ONLY and needs adjusting \*  
\* \* \* \* \*

-----=\_NextPart\_001\_01C20BC6.9601DD90--

-----  
Message-ID: <3CFCBF87.30900000@sockeye.com>  
Date: Tue, 04 Jun 2002 09:24:23 -0400  
From: John Shriver <jshriver@sockeye.com>  
MIME-Version: 1.0  
To: Old Tube Radios <boatanchors@theporch.com>  
CC: spr@earthlink.net  
Subject: Re: NPR "Lost and Found Sounds" about Radio Row  
Content-Type: text/plain; charset=us-ascii; format=flowed  
Content-Transfer-Encoding: 7bit

It appears you can listen to the broadcast at:

<http://www.npr.org/programs/lnfsound/stories/020603.radiorow.html>

Hmm, the link to the Real Audio file is missing there. Well, the "current week" page has the link:

<http://www.npr.org/programs/lnfsound/stories/current.html>

But it won't stay there forever.

The Real Audio file is at:

<http://www.npr.org/ramfiles/atc/20020603.atc.06.ram>

That should be fairly permanent.

It also has a link to a sonic memorial to the WTC site, both on the towers, and what was there beforehand:

<http://www.sonicmemorial.org/>

-----  
Message-ID: <007001c20be0\$81c8de40\$8a4c56d1@default>

From: "David L. Thompson" <thompson@mindspring.com>  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: S 72 update  
Date: Tue, 4 Jun 2002 11:57:18 -0400

I borrowed a NOS 1U4 and 1U5 and hooked up an antenna to the S 72 as Sandy W5TVW suggested (hooked it to the whip) and the S 72 sounds great on BC and shortwave up to about 20Mcs. Have not been able to hear much above 20 meters because the bands have not been good. Sunspots are Ok but storms and flares even cut out the short skip signals (hope they come back for Field Day).

I am able to tune in SSB stations on 20 and 40 (have not tried at night for 75). The bandspread works Ok but the calibration is off some and the instructions are meager in the manual and Sam's Photofacts. They give you restringing instructions but not calibration.

I also am still looking for a replacement for the handle. Its simulated leather. Mine has broken in 3 parts and is not repairable.

73 Dave K4JRB

-----  
From: "russ dworakowski" <wb3fau@hotmail.com>  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: tube  
Date: Tue, 04 Jun 2002 13:33:30 -0400  
Mime-Version: 1.0  
Content-Type: text/plain; format=flowed  
Message-ID: <LAW2-F22o6KHqiwEbbh000171b1@hotmail.com>

Bill Smith, I shipped your 7360 tube today- parcel post. Lost your email address, 73s Russ

-----  
Join the world's largest e-mail service with MSN Hotmail.  
<http://www.hotmail.com>

-----  
Message-Id: <5.1.0.14.0.20020604114333.00abe048@mail.earthlink.net>  
Date: Tue, 04 Jun 2002 11:46:58 -0700  
To: Old Tube Radios <boatanchors@theporch.com>  
From: Scott Robinson <spr@earthlink.net>  
Subject: Re: Audio quality in Boatanchors-why should you care?  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"; format=flowed

Avery,

It's not a dumb question. For a typical output stage, the output transformer might match 7000 ohms to 4 ohms. However, the output impedance of the 6F6 driving the transformer is more like 70,000 ohms than 7,000, and this ratio is reflected through the transformer to the speaker as a 40 ohm source impedance. A triode output tube in a similar situation might have a plate resistance (= output impedance in this case) of 1,000 ohms.

Feel free to ask for further clarification if confusion remains.

/scott

At 08:34 AM 6/4/2002 -0400, you wrote:

>Scott,

>

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>audio output tube(s), isn't the output (the secondary of the audio output  
>transformer) low impedance?

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>73, Avery W3AVE in Potomac, Md.

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>>suggest two reasons: listening pleasure and intelligibility.

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>>Someone recently posted a piece about his favorite old receivers, and  
>>commented that the one with the push-pull triodes (triode connected 6F6s,  
>>if I recall correctly) sounded better.

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>>First let me say that I do design professional audio equipment for a  
>>living, but I am NOT an audiophool. My house probably does not contain  
>>any oxygen free copper cable, my stereo does not have class A output  
>>stages, and I don't paint the edges of my CDs with green magic marker to  
>>improve the sound.

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>>1) Their distortion is lower order (mostly 2nd and 3rd harmonic) and  
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>>a damped oscillation. This change will probably make the interfering  
>>impulse more audible and cause it to affect intelligibility more.  
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>>PS-the spell checker tried to replace "triode" with "tirade." I refused.  
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>>  
>>Scott Robinson  
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>>  
>>Junque is GOOD for you!  
>></blockquote></x-html>  
>

-----  
Message-Id: <5.1.0.14.0.20020604114733.00aba960@mail.earthlink.net>  
Date: Tue, 04 Jun 2002 11:48:35 -0700  
To: Old Tube Radios <boatanchors@theporch.com>  
From: Scott Robinson <spr@earthlink.net>  
Subject: Re: S 72 update  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"; format=flowed



Dave,

For the handle, look at Antique Electronic Supply. They have several types.

([www.tubesandmore.com](http://www.tubesandmore.com))

/scott

At 11:57 AM 6/4/2002 -0400, you wrote:

>I borrowed a NOS 1U4 and 1U5 and hooked up an antenna to the S 72 as Sandy  
>W5TVW suggested (hooked it to the whip) and the S 72 sounds great on BC and  
>shortwave up to about 20Mcs. Have not been able to hear much above 20  
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>73 Dave K4JRB

-----  
Message-Id: <4.2.2.20020604145336.00aa0c90@ntpop.usnews.com>

Date: Tue, 04 Jun 2002 14:56:53 -0400

To: Old Tube Radios <[boatanchors@theporch.com](mailto:boatanchors@theporch.com)>

From: Avery Comarow <[acomarow@usnews.com](mailto:acomarow@usnews.com)>

Subject: Re: Audio quality in Boatanchors-why should you care?

Mime-Version: 1.0

Content-Type: multipart/alternative;

boundary="====\_79624944==\_ALT"

--\_79624944==\_ALT

Content-Type: text/plain; charset="us-ascii"; format=flowed

Scott,

Thanks. Now I'd better go back to the books and relearn how a driven device  
can see a different impedance than is apparent from the transformer feeding it.

Avery

At 11:46 AM 6/4/02 -0700, you wrote:

>Avery,  
>  
>It's not a dumb question. For a typical output stage, the output  
>transformer might match 7000 ohms to 4 ohms. However, the output impedance  
>of the 6F6 driving the transformer is more like 70,000 ohms than 7,000,  
>and this ratio is reflected through the transformer to the speaker as a 40  
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>Feel free to ask for further clarification if confusion remains.  
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>/scott  
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>>>spr@earthlink.net  
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Content-Transfer-Encoding: 7bit

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\* \* \* \* \*

--=====79624944==\_ALT--

-----  
Date: Tue, 04 Jun 2002 15:19:51 -0500  
From: Chuck Grandgent <chuck@k10m.com>  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: PC motherboard with a vacuum tube audio output section  
MIME-Version: 1.0  
Content-Type: text/plain; charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit  
Message-Id: <200206041519284.SM00545@brevia100>

As an indication of just how perverted the planet has become,  
here is a PC motherboard with a vacuum tube audio output section !

<http://www.aopen.com/products/mb/ax4b-533Tube.htm>

73, Chuck, K10M

-----  
From: "WF2U" <wf2u@starband.net>  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: RE: Audio quality in Boatanchors-why should you care?  
Date: Tue, 4 Jun 2002 15:33:07 -0400  
Message-ID: <NABBLNEJDDKECLKHCAAPOEBGHMAA.wf2u@starband.net>  
MIME-Version: 1.0  
Content-Type: text/plain;  
charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit

This means that in the given example the designer didn't do his/her homework  
and specified a transformer which doesn't give the correct impedance  
match/ratio for that tube...

73, Meir WF2U

(I happen to be an EE...)

-----Original Message-----  
From: owner-boatanchors@theporch.com  
[mailto:owner-boatanchors@theporch.com] On Behalf Of Scott Robinson  
Sent: Tuesday, June 04, 2002 2:47 PM

To: Old Tube Radios

Subject: Re: Audio quality in Boatanchors-why should you care?

Avery,

It's not a dumb question. For a typical output stage, the output transformer might match 7000 ohms to 4 ohms. However, the output impedance of the 6F6 driving the transformer is more like 70,000 ohms than 7,000, and this ratio is reflected through the transformer to the speaker as a 40 ohm source impedance. A triode output tube in a similar situation might have a plate resistance (= output impedance in this case) of 1,000 ohms.

Feel free to ask for further clarification if confusion remains.

/scott

At 08:34 AM 6/4/2002 -0400, you wrote:

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>audio output tube(s), isn't the output (the secondary of the audio output  
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>73, Avery W3AVE in Potomac, Md.

>

-----  
Message-Id: <5.1.0.14.0.20020604132012.00ae9a08@mail.earthlink.net>

Date: Tue, 04 Jun 2002 13:20:21 -0700

To: Old Tube Radios <boatanchors@theporch.com>

From: Scott Robinson <spr@earthlink.net>

Subject: Fwd: RE: Audio quality in Boatanchors-why should you care?

Mime-Version: 1.0

Content-Type: text/plain; charset="us-ascii"; format=flowed

>Date: Tue, 04 Jun 2002 13:19:26 -0700

>To: <wf2u@starband.net>

>From: Scott Robinson <spr@earthlink.net>

>Subject: RE: Audio quality in Boatanchors-why should you care?

>

>Meir,

>

>No, I don't think so. The tube manual calls for about a 7K load for the  
>6F6 to deliver maximum power, but its output impedance is much higher than  
>that. Don't get hung up on the maximum power transfer theorem (load Z =  
>source Z); that only applies for a purely resistive, linear source, and a  
>tube is more complicated than that. Basically, if the tube will modulate

>the current from 0 to 100 mA and permit a voltage swing of 500 volts for  
>that current swing, those are the numbers that determine the optimum load,  
>in this case  $500/0.1 = 5,000$  ohms, rather than the "plate resistance" of  
>the tube, which for a pentode is generally not even specified.

>

>Regards.

>

>scott

>

>At 03:33 PM 6/4/2002 -0400, you wrote:

>>This means that in the given example the designer didn't do his/her homework  
>>and specified a transformer which doesn't give the correct impedance  
>>match/ratio for that tube...

>>

>>73, Meir WF2U

>>

>>(I happen to be an EE...)

>>

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>>Subject: Re: Audio quality in Boatanchors-why should you care?

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-----  
Message-ID: <3CFD5DD0.DC827220@bellsouth.net>  
Date: Tue, 04 Jun 2002 17:39:45 -0700  
From: Robert Lawson <w4rl@bellsouth.net>  
MIME-Version: 1.0  
To: Old Tube Radios <boatanchors@theporch.com>  
CC: Old Tube Radios <boatanchors@theporch.com>  
Subject: Re: Swan 240 filament voltage  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Ed, Bob, et al,

Today with the help of my good friend Dave Kiker W5YSA owner of Tuned Circuits Inc here in Pensacola Florida ie AM/FM broadcasting engineering firm, my 6DQ5 filament voltage problem with my Swan 240 and new RCA 6DQ5 was solved. He had me install a 22 ohm 10 watt resistor in parallel with my NOS 'modern' 6DQ5. Orignally with the variac set at a Fluke measured 115 vac the filament voltage was way over 6.3 vac (I think around 8 plus) and the tubes down stream had low voltage ie V's 5,6,9,10,11,12,13,14. With the aforementioned resistor installed the filament voltage on the 6DQ5 came down to 6.4 vac and the downstream bottle-brothers had their filament brighten up a bit into a healthy range. I can live with that. I removed the filament wire from the 6DQ5 tube to the panel light for the plate meter and replaced it with the 10 watt resistor with it now dissapaiting around 3 watts. Swan really had a weird way to lighting up the glowbottles way back then. Of note, my BA op position has a bucking tansformer providing the 115 ac BA juice.

Hope this can be of of help, and many thanks to you Ed for doing all the original footwork.

73 Robert W4RL

w9ran@oneradio.net wrote:

> Ed and firebottle addicts,  
>  
> The minute I read the Subject line, I started wagging my hand in the air  
> like that smart-alec kid in school who always knew the answer!  
>  
> Fact is, I "been there, done that" and the answer was quite surprising.  
> Even the reknowned tube expert Lud Sibley was stumped, and pleased to  
> hear the final explanation which came from another guru, Jack Iverson.  
> Here is the summary I posted on the Swan list last year:  
>  
> -----  
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>  
> The mystery regarding the imbalance I was seeing in the series-parallel  
> filament  
> circuit on my Swan 240 has been resolved. Evidently the tube companies  
> produced  
> identically-marked versions of some tubes, including the 6DQ5 which ran  
> the  
> filament at lower temperatures, requiring less filament current. Both  
> tubes I'd  
> tried were this "dark heater" version, which upset the voltage division  
> in the  
> filament string. Thanks to Jack Iverson who correctly remembered this  
> and  
> provided me with the original higher-current version, my 240 is now back  
> in  
> operation.

>  
> I wanted to get this into the archives for future reference as I cannot  
> find any  
> difference in the appearance or marking of the version that works in the  
> 240 vs.  
> the dark heater version that does not.

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>  
> Now all you need to do is find an "old" 6DQ5, before this change was  
> made. The newer dark heater version draws 2 amps instead of 2.5 as  
> required by the Swan series/parallel filament design. Lud and Jack  
> think "runnign changes" like this were fairly common back then, after  
> all, who would care if a tube drew less heater current? (Swan 240  
> owners, that's who!)

>  
> 73,  
> Bob W9RAN

>  
> ----- Original Message -----  
> From: "Edward J Knobloch" <k4pf@juno.com>  
> To: "Old Tube Radios" <boatanchors@theporch.com>  
> Sent: Tuesday, May 21, 2002 11:29 PM  
> Subject: Swan 240 filament voltage

>  
> > Hi, Gang

> >  
> > I picked up a beat-up Swan 240 triband SSB rig a while back,  
> > with SW-117AC supply, and I'm just getting around to trouble-shoot it.  
> > Forgive me if I'm beating a dead horse, being new to Swan stuff.

> >



> > One interesting quirk is that Swan ran the heater  
> > for the 6DQ5 sweep tube in series with nine parallel  
> > connected 6.3V tubes, to divide the 12.6v from the power supply.  
> > The first problem is that I measure 8.5V across the 6DQ5,  
> > and 4.6V across the downstream tubes. Looking at the tube manuals,  
> > the downstream tubes should draw 3.05A at 6.3V, and the 6DQ5  
> > should have 6.3V across it at 2.5A. Ohm's Law tells me  
> > that the 6DQ5 heater should get 7.2V and the downstream tubes 5.9V  
> > with the 13.1V my supply is putting out - so Swan's design would be  
> > close to OK if the tubes' heater currents were as specified.  
> >  
> > I ran all the tubes through a tube tester, and there is no indication  
> > of any heater to cathode shorts.  
> >  
> > Did the tube manufacturers reduce the heater current required for the  
> > 6DQ5?  
> > If so, the higher resistance heater would upset the Swan's voltage  
> > division.  
> >  
> > Is there a particular brand 6DQ5 I should look for,  
> > or is there a "standard" fix to add resistance across the 6DQ5 heater  
> > to balance out the filament voltage?  
> >  
> > Thanks,  
> >  
> > Ed Knobloch k4pf@juno.com  
> >  
> >

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Message-ID: <3CFD67D3.A39EC517@bellsouth.net>  
Date: Tue, 04 Jun 2002 18:22:28 -0700  
From: Robert Lawson <w4rl@bellsouth.net>  
MIME-Version: 1.0  
To: Old Tube Radios <boatanchors@theporch.com>  
Subject: Re: Swan 240 filament voltage  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

And also thanks to you Bob for the archive info originally posted to Ed and all.

Of note, the NOS 6DQ5 was a RCA brand from Typetronics in Ft Lauderdale. Owned and run by Fred Schmidt N4TT, a true gentleman in the BA business. I highly recommend him.

w4rl sends

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> w9ran@oneradio.net wrote:  
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> >

> > 73,  
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End of BOATANCHORS Digest 3343  
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